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More Flak Over California Injection Wells, Groundwater Impacts

Richard Nemec

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The California oil/gas industry and its regulators have gone on the offensive over allegations that drinking water has been contaminated due to lax oversight of underground injection and that hydraulic fracturing (fracking) may have been involved.

The state's Division of Oil, Gas and Geothermal Resources (DOGGR) and the Department of Water Resources (DWR) are investigating 140 injection wells that could have injected toxic fluids into aquifers not cleared by the U.S. Environmental Protection Agency (EPA) to receive the injections (see *Shale Daily*, Feb.9). And a report in the *Los Angeles Times* last Wednesday raised allegations of industry tests of fracking fluid from the past year showing carcinogenic benzene levels 700 times higher than federal standards.

Regional EPA officials were quoted in the *Times* as being "shocked" over the reported benzene levels, along with recent revelations about allegedly lax DOGGR oversight of the underground injection control (UIC) program.

Regarding the benzene, state Oil/Gas Supervisor Steven Bohlen told *NGI*'s *Shale Daily* last Friday that full reporting of fracking fluid ingredients will not become mandatory under California's new well stimulation rules (SB 4)

until July 1, but "oil/gas operators have indicated to DOGGR that they are not using benzene as an ingredient in their fluid."

Bohlen pointed out that benzene is a naturally occurring hydrocarbon, so its presence in fracking waste fluid is expected. "DOGGR acknowledged that its record keeping and data collection systems must be upgraded, and that it has made errors in the permitting of injection wells," he said. "But we are working, along with other state and federal regulators, to ensure that oil/gas production takes place in a manner that upholds the provisions of the federal Safe Drinking Water Act and protects Californians and the environment."

A spokesperson for the Western States Petroleum Association (WSPA) said he was quite sure that flowback fluids are not reinjected into groundwater, and that water being extracted from a hydrocarbon zone "should not surprise anyone." In California, for every barrel of oil produced, 10 barrels of water come up.

"Crude oil typically contains high levels of benzene, so water commingled with that oil would also contain benzene," said the WSPA spokesperson. The key issue is that water is handled in a manner that ensures it does not mingle with or impact drinking water. To date, WSPA's understanding is that there has been no impact on drinking water, he said.

With the reports from industry required under SB 4, more data on the levels of harmful chemicals in fracking fluids is becoming available, but the state has not upgraded its processes for reporting and tracking the reinjected fluids, according to EPA officials. In December, EPA ordered DOGGR to come up with a plan for safeguarding drinking water by this month and gave them a two-year period for implementation. Bohlen unveiled the state's plan Feb. 9.

EPA has provided California with a $500,000 grant to help the state establish a baseline for water quality, and it has reminded state officials that the 1983 federal authorization for the state to regulate water usage in oil/gas operations could be revoked if California does not upgrade its programs.

State officials told *NGI*'s *Shale Daily* there is confusion in the general public, including news media, between groundwater and drinking water, and the role and content of fracking fluids in relationship to both types of

water. "Not all groundwater is created equal, and most groundwater is not drinkable without treatment," Bohlen said. “In some parts of the state, groundwater is mixed not only with naturally occurring hydrocarbons, but also with other naturally occurring elements, such as arsenic or boron."

Bohlen said that water injected after typical oil/gas operations is "similar to the native groundwater." Fracking was not involved in the 140 UIC program wells being investigated by DOGGR and DWR, he said. "Thus far, no harm to water suitable for drinking or agricultural use has been found," Bohlen said.